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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/988,878	11/19/2001	Amir Morad	0866/1D996US1	9165

7590 10/07/2003

McCermott Will & Emery
600 13th Street N W
Washington, DC 20005-3096

EXAMINER

DIEP, NHON THANH

ART UNIT	PAPER NUMBER
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2613

DATE MAILED: 10/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/988,878

Applicant(s)

MORAD ET AL.

Examiner

Nhon T Diep

Art Unit

2613

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7-18 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 7-18 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 09/010,859.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Claim 7 is objected to because of the following informalities: Claim 7, ln. 3 recites the limitation "the" in "the development of". There is insufficient antecedent basis for this limitation in the claim. The examiner suggests that the preamble should be changed to read: "A motion estimation processor for processing video signal in time comprising....". Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 7-9, 11, 13-16 and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Butter et al (US 6,549,575).

Butter et al discloses an efficient, flexible motion estimation architecture for real time MPEG 2 compliant encoding comprising the same motion estimation processor comprising a controller and a plurality of resolution processors, connected to the controller, the plurality of resolution processors analyzing the development of a video signal in time, thereby producing motion analysis, the controller controlling the plurality of resolution processors (fig. 8, el. 331, 321, 323, 301) as specified in claim 7; the

plurality of resolution processors include at least one low resolution processor, for producing low resolution motion analysis (el. 323) as specified in claim 8; the plurality of resolution processors include at least one full resolution processor, for producing full resolution motion analysis (el. 321) 9; the at least one low resolution processor reduces the resolution of a selected frame before producing the low motion analysis (el. 323) as specified in claim 11; the plurality of resolution processors include at least one full resolution processor, for producing full resolution motion analysis (el. 321) as specified in claim 13; A digital processor for processing a multiple frame video digital signal, comprising: a DSP controller, a plurality of processing units connected to the DSP controller for processing the multiple frame video digital signal; and at least one storage unit (inherently included), wherein each of the processing units is connected to at least one of the at least one storage units. The DSP controller controlling the plurality of processing units, wherein the DSP controller, the plurality of processing units and the at least one storage unit are on a single chip (fig. 8, el. 301, 321, 323 and col. ~~10~~⁸, ln. 64 – col. 9, ln. 22 and col. 9, ln. 58 – col. 10, ln. 44) as specified in claim 15; each of the processing units is operative to access any storage address of any of the at least one storage unit, connected thereto (col. 1, ln. 46-61: DRAM and SRAM) as specified in claim 16; each of the processing units operates on a different portion of data (data of the full resolution is considered different from data of the half resolution) as specified in claim 18.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 10, 12 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Butter et al (US 6,549,575).

As applied to claims 7 and 15 above, it is noted that Butter et al does not particularly disclose that:

a. the plurality of resolution processors include at least one hyper resolution processor, for producing hyper resolution motion analysis; and the at least one hyper resolution processor enhances the resolution of a selected frame before producing the hyper motion analysis as specified in claims 10 and 12; and

b. each of the processing units operates according to a different program command as specified in claim 17.

With regard to a: Although, Butter et al does not particularly disclose a separate process for processing hyper resolution level; however, Butter et al does disclose at least two different resolution levels. And therefore, it would have been obvious to one of ordinary skilled in the art at the time the invention was made to modify the system of Butter et al by enhancing the full resolution level and when transmission bandwidth allows, to form a higher resolution level to transmit better images for viewer.

With regard to b: It is well known the motion estimation process can be run by using software and therefore, it would have been obvious to one of ordinary skilled in the art

at the time the invention was made to modify the system of Butter et al by using software to process motion estimation and because there are different estimating processes, in accordance with different resolution levels, it would also have been obvious to have different software program for different process.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. ***

a. Ramchadran et al (US 5,267,021) discloses a multiresolution digital television broadcast system.

b. Homma (US 5,512,962) discloses a motion vector detecting apparatus for moving picture.

c. Hsieh (US 5,761,200) discloses an intelligent distributed data transfer system.

d. Civanlar et al (US 5,691,768) discloses a multiresolution, multistream video system using a single standard decoder.

e. Son (US 5,821,886) discloses a variable length code detection in a signal processing system.

f. Kopet et al (US 5,510,857) discloses a motion estimation coprocessor.

g. Ju et al (WO 96/08114) discloses a method and apparatus for global-to-local block motion estimation.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nhon T Diep whose telephone number is 703-305-4648. The examiner can normally be reached on m-f.

Application/Control Number: 09/988,878
Art Unit: 2613

Page 6

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris S Kelley can be reached on 703 305-4856. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 305-2600.

A handwritten signature in black ink, appearing to read 'Nhon Diep', written over a horizontal line.

NHON DIEP
PRIMARY EXAMINER

ND
30 Sept 2003